



Innovation for biocides: downstream users' perspectives The case of detergents

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A broad product range to be preserved

Both Household and Professional Cleaning



50% of the total A.I.S.E. product portfolio (= €18 bn turnover) relies on in-can preservatives



R&D efforts from the sector

- Attempt to eliminate / reduce use of in-can preservatives in the past years
- Some companies have dedicated R&D programs (Millions EUR invested)
- Reduction of the level of preservatives is possible in some cases



Options explored by the sector

1. Optimisation of products composition :
water level, compaction, ingredients' level
2. pH increase/ decrease
3. Powder or solid formats





1. Optimisation of product composition?

- Reduction of water level, increase of surfactants level
- Elimination of preservatives is possible in some cases
 - Professional products
 - Laundry detergent capsules
- Issues/ limitations:
 - More hazardous products (more severe CLP classification)
 - Capsules: many consumers prefer 'normal' liquid detergents (e.g. due to flexibility in dosing, cost)





2. pH increase / decrease ?

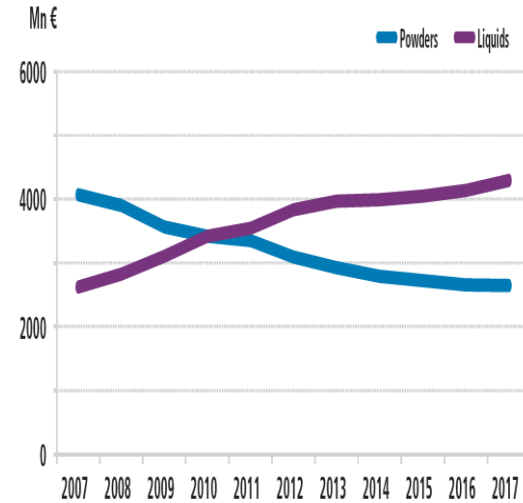
- pH range conducive to microbial growth:
 $3 < \text{pH} < 10$
- Very limited number of products can be formulated at extreme pH's
 - Some all purpose cleaners (e.g. acidic descalers)
 - Some professional products
- Drawback: more hazardous products (more severe CLP classification, e.g. Skin/Eye corrosive)





3. Powder or solid formats ?

- Market preference: liquid format
- End-users needs better addressed by liquid form
 - Convenient & accurate dosing/ use: e.g. window cleaners in spray, automatic dosing systems for professional uses
 - Ready-to-use products
- Sustainability aspects:
 - Powder detergents are more energy intensive to produce than liquids
 - Liquid detergents enable energy savings (cold wash cycles)



Household liquid vs. powder laundry detergent market (source Euromonitor, EU28, Retail Sales Prices)





3. Powder or solid formats?

- A few attempts on the market to move to powder/ solid form
 - Very specific product categories, e.g. fragrance boosters in “pearl” form (alternative to fabric conditioners, but deliver only the perfume benefits)
 - Incidental in terms of products range to be preserved





Attempts to find alternatives “GC3 Preservatives challenge”

- Aim: identify and support innovators developing new preservatives for household & personal care products
- Sponsored by preservatives’ suppliers and downstream users
- Outcome (household care):
 - Led to interesting science
 - Did not identify any technology that would be usable in the short/medium term



Conclusions

- Major R&D efforts in the past years
- A few solutions exist, BUT
 - Only for specific products; limited portion of A.I.S.E. liquid products range
 - Always associated with drawbacks: e.g. more hazardous products, sustainability
- **Total elimination of in-can preservatives is not possible for the majority of products**



Way forward?

- The detergent and cleaning products industry is committed to pursue R&D efforts
- Long-term innovation?
 - R&D investments - challenging for SME's
 - Requires time





Thank you for your attention!